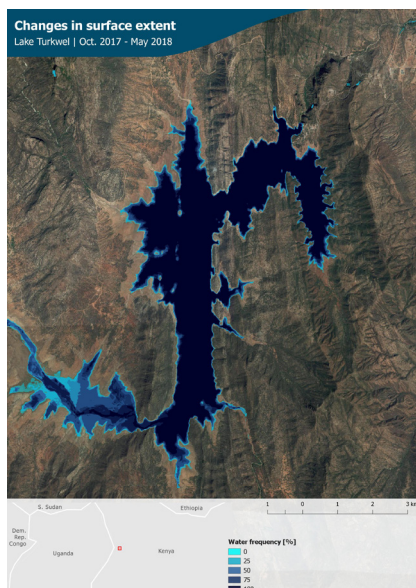


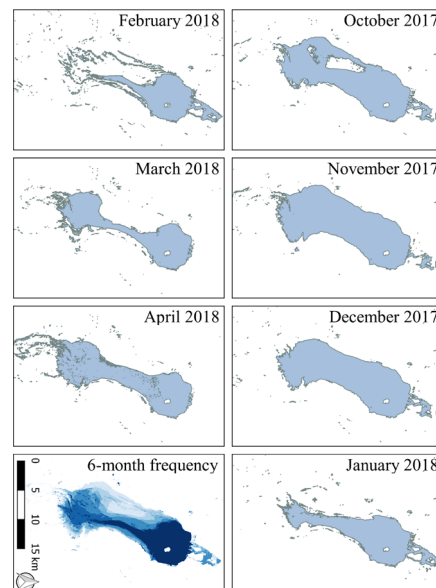


## Surface Water Extent (SWE)

- EO input data:** Sentinel-1, Sentinel-2, Landsat-8
- Other input data:** Digital Elevation Model (<30m resolution) [optional]
- Method:** WorldWater will develop and test a surface water extent mapping algorithm based on continuous observations from multi-sensor EO satellite data of high-resolution radar (Sentinel-1) as well as optical (Landsat 8 and Sentinel-2) data to fully cover the dynamics of open surface water. Using a hybrid sensor approach, i.e. combining optical and radar observations, will provide a more robust delineation of water surfaces compared to traditional (either optical or radar) approaches with SAR imagery providing all-weather capabilities and optical data helping to address difficult surface types (i.e. flat, sandy, or frozen surfaces, rough waters) as well as providing a more complete picture of the water dynamics due to the higher observation frequency.
- Output indicators:** i) surface water extent [seasonal and permanent water; water occurrence]; ii) changes in surface water extent (between 2 years) and iii) changes in surface water extent (for 4 years).
- Spatial resolution:** 10 meters
- Temporal resolution:** Monthly, 2017-2020
- Delivery format:** GeoTiff, QGIS style file, additional information or other data for mats upon request
- Thematic Accuracy:** >85% overall accuracy
- Relevance:** Assessing surface water dynamics is crucial for water resource management, and decision-making in water-sensitive sectors e.g. supporting water supply planning, irrigation management, mitigation of flood and drought risk, and identification of climate trends.



Water frequency map of individual water body



Monthly surface water extent of a selected water body in Africa from Oct 2017 – April 2018, including water frequency map

